

What is claimed is:

1. A control program structure of an ATM switching system comprising:

5 a master function unit mounted at a processor board existing outside a switching system;

a protocol processing function unit mounted at a processor board existing in the switching system; and

10 a plurality of resource control function units for receiving a control request message through the protocol processing function unit from the master function unit and actually controlling a hardware resource of the switching system.

2. The structure according to claim 1, wherein the master function unit performs a master function of a standard protocol and the protocol processing function unit performs a slave function of the standard protocol.

3. The structure according to claim 2, wherein the standard protocol is a general switch management protocol.

20 4. The structure according to claim 1, wherein the protocol processing function unit is mounted at only one of the plurality of processor boards, and the plurality of resource control function units are separately mounted at each processor board of the switching system.

25 5. The structure according to claim 4, wherein the plurality of

resource control function units interwork with each other to be operated.

6. A control program structure of an ATM switching system comprising:

5 a master function unit for performing a master function of a standard protocol;

an application program for controlling the ATM switching system through the master function unit;

10 a protocol processing unit for interfacing with the master function unit through the standard protocol and processing a protocol message transmitted from the master function unit; and

a plurality of resource control function unit for analyzing a control request message outputted from the protocol processing unit and controlling and managing a hardware resource.

15 7. The structure according to claim 6, wherein the standard protocol is a general switch management protocol.

8. The structure according to claim 6, wherein the protocol  
20 processing function unit is mounted at only one of the plurality of processor boards, and the plurality of resource control function units are separately mounted at each processor board of the switching system.

9. The structure according to claim 6, wherein the protocol  
25 processing function unit analyzes port information included in the received control

request message and transmits a corresponding resource control message to one of the plurality of resource control function units.

10. The structure according to claim 6, wherein the protocol  
5 processing function unit generates a child\_process for performing an appropriate function according to the type of the control request message and processes the corresponding resource control message.

11. The structure according to claim 6, wherein the plurality of  
10 resource control function units interwork to each other to be operated.

12. A method for controlling a hardware resource of an ATM switching system comprising the steps of:

15 receiving a resource control message through a standard protocol from a protocol master;

transmitting a resource control message from a protocol processing function unit to one of a plurality of the resource control function unit according to port information of a received resource control message; and

20 performing a controlling operation for an actual hardware resource by the resource control function unit according to the type of the transmitted resource control message.

13. The method according to claim 12, wherein the standard protocol  
25 is a general switch management protocol and the protocol processing function unit performs a slave function of the standard protocol.

14. The method according to claim 12, wherein the protocol processing function unit is mounted at only one of the plurality of processor boards, and the plurality of resource control function units are separately mounted at each  
5 processor board of the switching system.

15. The method according to claim 12, wherein when the resource control message is a connection control message, the resource control function unit interworks with other resource control function unit, to process the resource  
10 control message.

16. The method according to claim 12, wherein the resource control message transmitting step comprising the sub-steps of:

performing binding and synchronizing with the plurality of resource control  
15 function units;

performing synchronization with the protocol master;

being in a standby state for receiving the resource control message from the protocol master;

checking a protocol error of a message to discriminate the type of the  
20 message when the resource control message is received; and

generating an appropriate child\_process according to the type of the message as discriminated and transmitting a corresponding resource control message to the resource control function unit.

25 17. The method according to claim 16, wherein the child\_process

comprising:

a subroutine for transmitting a connection control request message;

a subroutine for transmitting a statistics request message;

a subroutine for processing a configuration request message or a  
5 configuration change informing message outputted from the resource control  
function unit; and

a subroutine for processing a port state change informing message  
outputted from the resource control function unit.

10 18 The method according to claim 16, wherein the resource control  
message is transmitted to one of the plurality of resource control function unit  
according to port information included in the control request message.

15 19. The method according to claim 12, wherein the step of performing  
a controlling operation for an actual hardware resource comprising the sub-steps  
of:

performing binding and synchronizing with the protocol processing  
function unit;

20 transmitting the configuration information of the switching system to the  
protocol processing function unit;

being in a standby state for receiving the resource control message from  
the protocol processing function unit,

checking an error of a corresponding message and discriminating the type  
of the message when the resource control message is received; and

25 generating an appropriate child\_process according to the type of the

message as discriminated and processing the corresponding resource control message.

20. The method according to claim 19, wherein the child\_process  
5 comprising:

a subroutine for processing the connection control request message; and

a subroutine for processing a statistics request message or a  
configuration/state change informing message outputted from an operation  
maintenance block.

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